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## The impact of event-by-event hydrodynamic evolution in jet observables with JEWEL+v-USPhydro

We calculate several observables probing jet phenomena in heavy-ion collisions that propagates JEWEL medium-modified parton showers in event-by-event (2+1)D v-USPhydro profiles with T<sub>R</sub>ENTo initial conditions. The jet-hydro interface incorporates finer features from the hydrodynamic calculation, such as local fluid velocity and the applied equation of state, to realistically simulate partonic evolution in lead-lead collisions at LHC energy scales. A collection of jet observables, including  $R_{AA}$ , anisotropies, dijet asymmetry, and substructure, is presented to assess the impact of event-by-event medium effects on jets with direct comparisons to JEWEL original longitudinal-only approach and expand upon prior results [1]. The model shows overall improvement in the description of experimental data, specially in non-central collisions, and reveals previously unexplored intricate effects of the realistic hydrodynamic description on JEWEL medium response and hadronization methodologies.

[1] L. Barreto, F. M. Canedo, M. G. Munhoz, J. Noronha and J. Noronha-Hostler, “Jet cone radius dependence of  $R_{AA}$  and  $v_2$  at PbPb 5.02 TeV from JEWEL+T<sub>R</sub>ENTo+v-USPhydro,” Aug. 2022. [arXiv:2208.02061 [nucl-th]].

### Category

Theory

### Collaboration (if applicable)

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